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LAWNS FOR ISLAND HOMES:
PLANTING A NEW LAWN

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In Hawaii, any month of the year is planting time, but the very wet and the very dry months are best avoided. During wet weather (December, January, February), planting tends to compact soils, and wet soils are difficult to work. When very dry, soils may cause failures or partial failures in planting if not properly conditioned or irrigated. Also, water consumption during very dry weather (July, August) may be costly for the homeowner.

For best results pre-soak the soil at least two or three days before planting sprigs, stolons, or plugs.

BEFORE PLANTING

Measure the Area

Measuring your lawn area is important because you must know the size of your lawn to determine how much seed and/or planting material to purchase and how much fertilizers, insecticides, fungicides, and weed killers to apply. Here is an easy way to measure:

Pace Off Distances

The measurements need not be too accurate. Use this rule of thumb: An adult step is about 30 inches or 2½ feet; so 2 steps equal 5 feet, 3 steps equal 7½ feet, 4 steps equal 10 feet, etc.

Square or Rectangular Areas

Measure the length of the area, then the width, and multiply them. This will give you the approximate area in square feet *(Figure 1).*

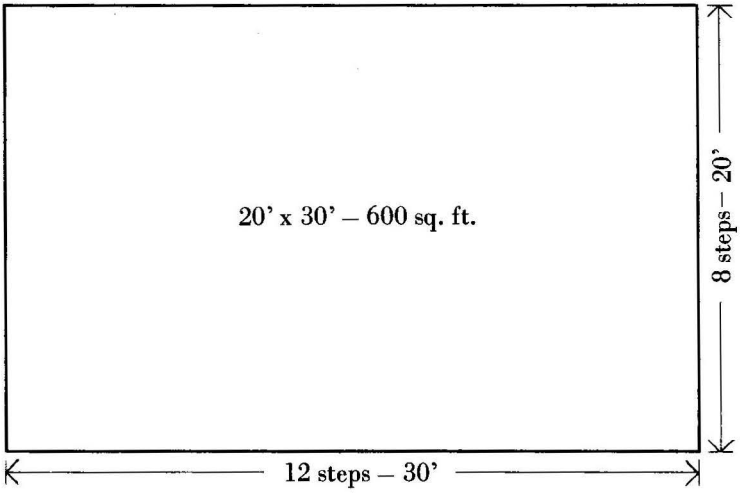

Figure 1. *Measuring rectangular areas.*

Estimate Odd-Shaped Areas

This may take guesswork, but you can come close enough by working out the "squares" involved, or by plotting the area on graph paper and counting squares *(Figure 2).*

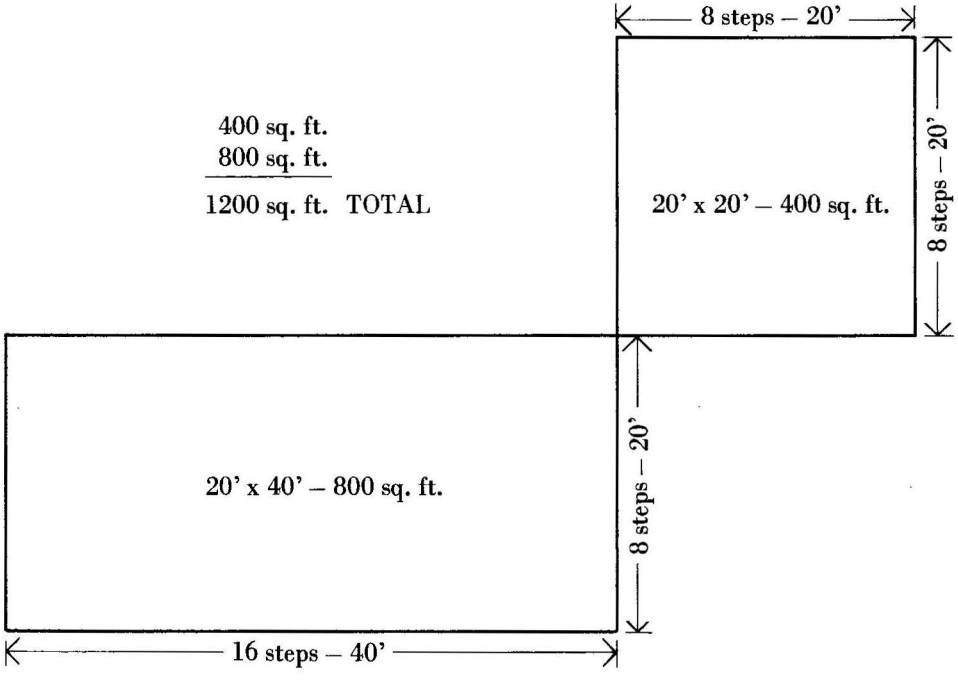

Figure 2. *Measuring odd-shaped areas.*

Control Weeds

The best method to control weeds before planting is to fumigate the soil. Methyl bromide has been used extensively but the homeowner should employ a licensed operator or secure a permit from the Department of Health before using this gas. Methyl bromide kills all weed growth as well as most weed seeds, including some nutgrass, provided the soil is properly prepared so that the gas will reach all weed seed. The fact that viable weed seeds are killed by methyl bromide means no weeding problem during the period when your lawn is starting, except for weed seeds blown or washed in. Vapam has been used but is not as effective as methyl bromide. With methyl bromide, planting can be done three or four days after treatment.

Another way to control weeds is to prepare the area far in advance of actual planting. Irrigate to force weeds to grow. When weeds are a few inches high, apply a chemical such as Paraquat or Phytar 560 (disodium methyl arsenic acid) to kill all new weed growth. *Planting can be done five days after

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*CAUTION: Follow label directions when mixing and applying Paraquat or Phytar 560. Spray or chemical that comes in contact with bare skin should be washed off immediately. Do not breathe in fumes. Keep children and pets out of sprayed area for 24 to 48 hours.

application but, to be sure, wait a few more days. If a chemical is not used, continuous tilling of the first few inches of soil with a garden hoe, spading fork, or rototiller will control weeds. This method is slow but it will help.

Fertilizing

After your area has been properly levelled, apply a complete (well-balanced) fertilizer. Fertilizers such as 10-30-10, 10-10-5, etc., can be applied at the rate of 20 pounds (2 lb. actual nitrogen) for each 1,000 square feet of area.

See table on page 19
for amount of fertilizer material required.

With a metal rake or garden hoe, mix well the fertilizer with the first 3 or 4 inches of soil. Smooth the area carefully and plant your grass.

WHEN PLANTING

Most subtropical grasses are planted by sprigging, stolonizing, or sodding. Common bermudagrass and centipedegrass seeds are available and may be more desirable to use than the vegetative material of these grasses. On the new and better strains of hybrid bermuda, zoysia, and St. Augustine grasses, viable seeds are not produced. Sodding is the instant way of establishing new lawns. It is practiced especially in small areas, or by those who can afford it.

Seeding

The beauty of your lawn will depend on the quality of seed you plant. It is wise to obtain good seed. Check on the germination and weed percentage. When buying bermudagrass seed, get 1 to 2 pounds of Certified Arizona Common hulled seed per 1,000 square feet. Centipedegrass or Honangrass (Hunangrass) seed is also available; get 8 ounces per 1,000 square feet.

The best time to sow grass seed is on a calm day. Never seed on a windy day. It is wise to use dry sand or similar materials mixed with the seed so the seed is well distributed.

Broadcast the seed evenly over a measured area. This may be done by using a hand fertilizer spreader or by hand. With either method, divide the seed for a given area into two equal parts and sow one-half of the seed by going across the whole area from north to south. Plant the remaining seed by walking across the whole area east to west *(Figure 3).*

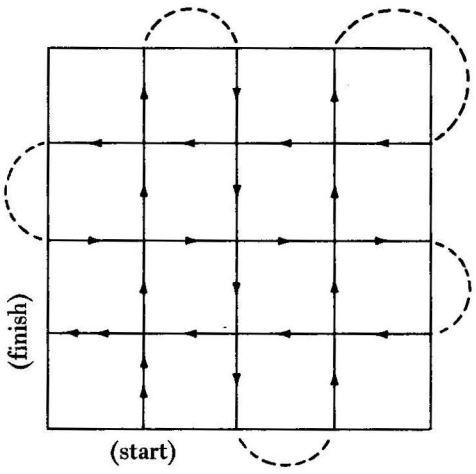


Figure 3. *Seeding the lawn.*

To distribute the seed by hand, swing the arm in a wide arc and let the seed slip out of the hand while the arm is in motion. The wider you swing your arm, the more even the distribution. A bamboo or a wire rake pulled lightly over the surface after seeding will do a good job of covering the seed. If desired, a thin mulch of sawdust or similar material may be applied immediately after seeding to hold the seed in place and to keep the surface moist.

A light lawn roller may be used to firm the soil after seeding and mulching, but it should *never* be used on heavy soil, or on wet soil.

Sprigging

Sprigs or runners of bermuda, zoysia, St. Augustine, or centipede grasses are obtained by tearing apart or shredding solid, established, weed-free sod. Sprigs are planted in rows from 6 to 12 inches apart and about 2 inches deep in shallow trenches *(Figure 4).* The sprigs may be placed end to end in the rows or at spaced intervals. Thoroughly cover all of the root system but leave some of the leaf surface exposed. Put pressure beside the trench to secure the sprigs. Roll if desired or if soil type permits. Planting material is used more efficiently by sprigging this way—the least expensive but a laborious method *(Figure 4).*

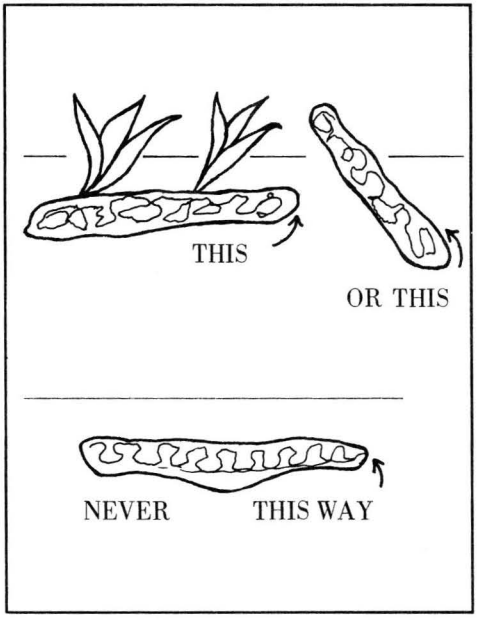


Figure 4. *Planting sprigs.*

Lines about 6 inches apart made with a hoe and ready for sprigging.

Stolons, which consist of stems and leaves, can be substituted for sprigs. Cover with soil by putting pressure beside the trench but leaving sections of plant material exposed.

Stolonizing

Stolonizing is the broadcasting of stolons or chopped or shredded plant material over a well-prepared, fertilized, and pre-soaked seedbed. The stolons are then topdressed with the same materials used as the mulch in the seedbed to a depth of about ¼ inch. The area should then be rolled lightly to press the topdressing and stolons firmly into the soil. A hand-operated planter machine with discs (stolonizer), if available, is used instead of topdressing.

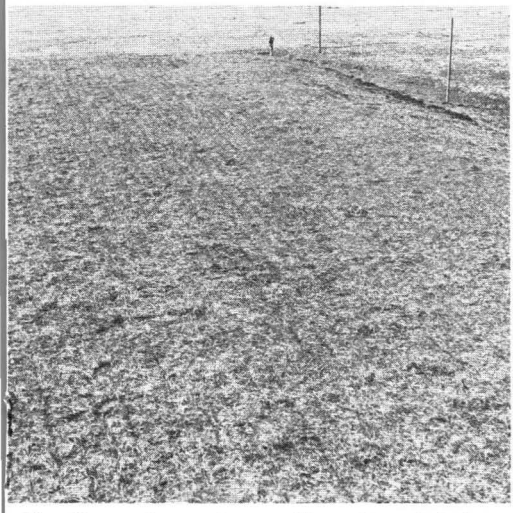
It is essential that the new lawn be kept continuously moist but not soggy for about 14 days. New growth will appear in 7 to 10 days depending on the variety planted and the care given.

A light roller, partly filled with water, is rolled over the stolons before and after using the stolonizer.

A combination stolonizer and roller with power attachment.

Stolonizing or broadcasting shredded or chopped plant material. Note coverage.

A type of stolonizer which buries the stolons in the soil. Note shape of discs. Other types have smooth edges.



Freshly stolonized area. Note lines left by stolonizer.

A type of sprinkler used in watering the newly planted turf. Full coverage and medium-fine spray are important.

Plugging

Plugging consists of setting 1- to 2-inch-square chunks of growing turf into holes dug in the prepared soil surface. Spacing of the chunks of turf may be from 4 to 8 inches apart, depending on the type of grass planted. The closer the spacing the more rapid will be the rate of cover. Plugging is the surest method of starting a lawn but it may be expensive and leaves a bumpy turf. The use of a roller when the soil is dry will help reduce the bumpiness.

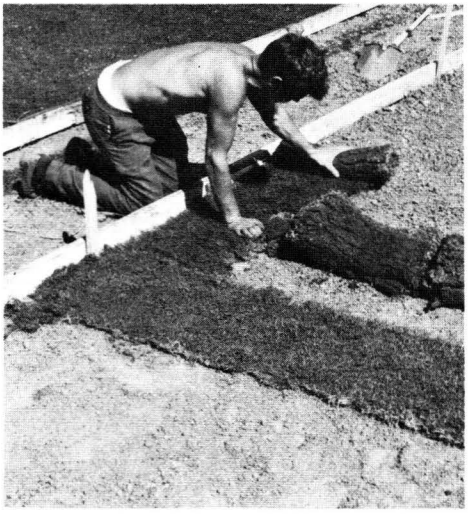
Cutting plugs about 2 inches square.

Sodding

Sodding is the laying of solid strips of sod, floor-tile fashion, in blocks that are usually 12 to 18 inches square and ½ to ¾ inch thick. Sodding is costly and is recommended only where immediate coverage is needed or for small turf areas.

The surface should be properly prepared and free of stones, mounds, or depressions. The sod should be laid like floor-tile and pressed snugly against the sod next to it. Roll or pack lightly. When sodding slopes, secure each block of sod with wooden pegs.

Keep sod well watered. After rooting has started, topdress lightly with a good topsoil mixture to fill in all crevices.



Note rolls of sod ready to be unrolled.

Laying a block of sod. Note position of sod next to it.

Rate of Growth

Seeded Arizona Common bermudagrass will germinate in 7 to 10 days. Seeded centipedegrass will germinate in 8 to 12 days. Pre-soaking before seeding reduces the germination time and helps to beat the weeds. Put the seeds in a muslin bag and allow to soak in warm or tap water overnight. The next day, drain and allow seeds to dry in the bag at room temperature for two days. On the fourth day plant the seeds.

Bermudagrass sprigs or stolons, if properly cared for, will usually be fully covered at the end of 6 to 10 weeks. St. Augustine and zoysia grasses require much longer periods. Plugging may take slightly longer unless planted at spacings closer than 6 inches. The application of a high phosphate balanced fertilizer followed by one with a high nitrogen content helps to promote fast growth.

AFTER PLANTING

Re-levelling

It is very important that lawns planted by sprigging, stolonizing, or plugging be re-levelled after the grass has started to grow. This is especially necessary with the newer hybrid bermuda, centipede, St. Augustine, and zoysia grasses. Otherwise, unsatisfactory, scalped areas will appear on the lawn.

The re-levelling should be done gradually so that the new grass plant is not covered entirely. Re-levelling may be accomplished by topdressing. If possible, use the soil on the site to topdress after adding 1/3 by volume of organic matter (weed-free manure, compost, sawdust, etc.).

Watering

Lawns planted by sprigging or stolonizing must be watered immediately. These and the seeded grasses must be kept constantly moist until the lawn is well established. To start with, use a hose long enough to go around your lawn without having to drag it across the lawn and a hand sprinkler that throws out a gentle spray. A plastic hose with holes (soaker hose) is also suggested. If it becomes necessary to go into the newly planted lawn, lay a plank and walk on it. Strong sprays of water on newly planted lawns, as well as too much water, will wash away soil and seed. After the lawn is established, the conventional sprinklers and sprinkler systems can be turned on.

It is to your advantage to install a sprinkler system before establishing a lawn. A workable system can be installed at a relatively small cost, resulting in a minimum of labor for lawn care.

Keep the soil moist, not wet, until the grasses have become established and filled in. The grasses develop deeper roots as they grow older. Watering, then, should become less frequent but heavier per application (two or three times per week).

Mowing

You can begin mowing when the new growth is about 1 or 1½ inches high for bermudagrasses and 2 or 3 inches high for St. Augustinegrass. This will encourage the development and spreading of runners and/or underground stolons. When the grass is allowed to grow too tall, cutting will remove much of the leaf surface needed for proper plant growth. Never remove more than one-half of the top growth at any one time. To prevent the removal of too much top growth, gradually lower the cutting height of the mower each time you mow. After two or three weeks of cutting, the desired height can be attained.

Use only extra-sharp reel mowers. This will prevent the young plants from being injured or pulled out. Never mow when the grass and soil are wet.

Remove clippings from the lawn to prevent them from smothering the tender young plants and detracting from the beauty of a newly planted lawn.

Exposure to Traffic

Young plants are usually tender and sensitive. Mowing, moving the hose around, and some occasional weeding should be the only traffic on the area until the turf has filled in enough to completely cover the soil.

Fertilizing

If the proper fertilizer has been added during establishment, a lawn should not need fertilizing until after it has been cut a few times or when signs of hunger are apparent. For the first two or three months, fertilize twice monthly. Use 1 pound actual nitrogen per 1,000 square feet of area every two weeks (use 10 pounds when using 10-10-5 fertilizer or use 5 pounds when using sulfate of ammonia, etc.). After the grass is fully established, the normal fertilization program should be followed.

Weed Control

When you fertilize and water your soil, the weed seeds germinate as well as the lawn seed or plant material. Generally, as your lawn fills in with frequent mowings, adequate fertilizer, and proper irrigation, most of the weed seeds will be controlled. Most weeds are seldom a problem in a healthy, well-maintained lawn.

When it becomes necessary to hand weed, do so by laying a plank across the lawn for you to talk on. Use chemicals to control weeds in newly planted lawns only with proper advice and guidance.

Insect Control

Armyworms, hunting billbugs, and grass webworms are the important insects to guard against. Follow recommendations in Entomology Notes Nos. 1, 2, and 6, published by the University of Hawaii Cooperative Extension Service.

Disease Control

Some diseases appear during and after periods of high temperature, high humidity, and heavy rains or after too much watering. Poor drainage conditions also cause disease. When diseases appear, it is advisable to use a good lawn fungicide purchased from your garden shop.

Amount of fertilizer material required to give approximately 1 and 2 lbs. actual nitrogen (N) to cover 1,000 sq. ft. of area

Fertilizer*	1 lb. Nitrogen LB.	2 lb. Nitrogen LB.
10-10-2	10	20
10-10-5	10	20
10-10-6.6	10	20
10-20-20	10	20
10-30-10	10	20
10-10-10	10	20
13-13-13	7½	15
16-16-16	6½	13
18- 8- 4	6	12
16- 4- 4	6½	13
20- 5- 5	5	10
20- 5-10	5	10
11-48- 0	10	20
21-53- 0	5	10
21- 0- 0	5	10
22- 4- 4	4½	9
46- 0- 0	2¼	4½

*Commercial fertilizers are labeled with a three-number analysis, N-P-K, which always states in that order the percent of each of these three major plant foods. For example, a 10-10-5 commercial fertilizer contains 10 percent nitrogen (N), 10 percent phosphoric acid (P_2O_5), and 5 percent potash (K).

Acknowledgments

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